## PROJECT DESCRIPTION

### I. GENERAL:

THIS PROJECT INVOLVES THE RECONSTRUCTION OF AN EXISTING TRAFFIC SIGNAL AT THE INTERSECTION OF MD 458 (SILVER HILL ROAD) AND SWANN ROAD IN PRINCE GEORGE'S COUNTY.

MD 458 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

### II. INTERSECTION OPERATION:

THE PROPOSED TRAFFIC SIGNAL WILL CONTINUE TO OPERATE IN A FULLY ACTUATED MODE USING SIX (6) NEMA PHASES.

MAINLINE MD 458 OPERATES CONCURRENTLY WITH LEADING LEFT TURN PHASES PROVIDED FOR BOTH APPROACHES. THE SWANN ROAD APPROACHES OPERATE CONCURRENTLY WITH SOUTHBOUND RIGHT TURN OVERLAP DURING THE EASTBOUND MD 458 LEFT TURN PHASE.
THIS INTERSECTION IS PART OF THE MD 458 INTERCONNECT SIGNAL SYSTEM.

VIDEO CAMERAS SHALL PROVIDE PRESENCE DETECTION. THE EXISTING PEDESTRIAN CROSSINGS SHALL BE UPGRADED TO INCLUDE APS/CPS SIGNALS AND ADA RAMPS. A NEW NEMA "S" CABINET WILL BE INSTALLED WITH NECESSARY EQUIPMENT.

AUDIBLE PUSHBUTTON FUNCTION SHALL BE AS FOLLOWS:

1. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE:

FOR NORTH LEG, "WAIT TO CROSS CENSUS BUREAU AT SILVER HILL, WAIT"
FOR SOUTH LEG, "WAIT TO CROSS SWANN AT SILVER HILL, WAIT"
FOR WEST LEG, "WAIT TO CROSS SILVER HILL AT SWANN AND CENSUS BUREAU, WAIT"

2. WHEN THE "WALK" PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL CONTINUE FOR THE DURATION OF THE "WALK" PHASE.

## PROJECT CONTACTS

MR. VENU NEMANI
ASST. DISTRICT ENGINEER-TRAFFIC
PHONE: 301-513-7404

MR. EDWARD RODENHIZER
CHIEF-SIGNAL OPERATIONS SECT.
PHONE: 410-787-7650

MR. TOM FOUNTAIN
ASST. DISTRICT ENGINEER-MAINTENANCE
PHONE: 301-513-7304

MR. SONNY BAILEY
CHIEF-SIGN SHOP
PHONE: 410-787-7670

MR. VICTOR GRAFTON
UTILITY ENGINEER
PHONE: 301-513-7350

MR. MIKE STOCKER
SUPERVISOR, SIGNAL WAREHOUSE
PHONE: 410-787-7668

MR. AVIJIT MAJI
CHIEF-TRAFFIC OPERATIONS DIV.
PHONE: 410-787-7630

POWER COMPANY REPRESENTATIVE - PEPCO (PG):
MR. RICHARD CHILCOAT, SERVICE ASSOCIATE
PEPCO ENGINEERING
8300 OLD MARLBORO PIKE
UPPER MARLBORO MARYLAND 20772
PHONE: 301-967-5805, FAX: 301-967-5820
EMAIL RACHILCOAT@PEPCO.COM

MAINTENANCE OF TRAFFIC WILL BE HANDLED BY THE CONTRACTOR USING THE STANDARD PLATES FOR TRAFFIC CONTROL FROM SECTION MD 104.00 OF THE SHA BOOK OF STANDARDS FOR HIGHWAYS & INCIDENTAL STRUCTURES.

## EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE ADMINISTRATION.

| CATEGORY CODE NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 9104 | 1 EA | SIZE 'S' CABINET WITH CONTROLLER AND VIDEO INTERFACE EQUIPMENT 1-8 CAMERAS. |
| 9110 | 1 EA | BATTERY BACKUP EQUIPMENT FOR "S" CABINET |
| 9118 | 2 EA | 4 CHANNEL DETECTOR AMPLIFIER |

## EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

| CATEGORY CODE NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 201032 | 31.5 CY | CLASS 2 EXCAVATION |
| 203030 | 5 CY | TEST PIT EXCAVATION |
| 585621 | 400 LF | 12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES |
| 585625 | 170 LF | 24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES |
| 634300 | 275 LF | STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH |
| 655105 | 1030 SF | 5 INCH CONCRETE SIDEWALK |
| 655120 | 54 SF | DETECTABLE WARNING SURFACE FOR CURB RAMPS (RED) |
| 800000 | 1 EA | 2-WIRE CENTRAL CONTROL UNIT |
| 800000 | 6 EA | 8 INCH LED SIGNAL HEAD SECTION |
| 800000 | 6 EA | AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION |
| 800000 | 360 LF | DISCONNECT, PULL-BACK AND REROUTE CABLES |
| 800000 | 6 EA | LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEADS |
| 800000 | 1 EA | REMOVE AND DISPOSE OF EQUIPMENT (PER ASSIGNMENT) |
| 800000 | 4 EA | VIDEO DETECTION CAMERA AND CABLE, ANY LENGTH |
| 801004 | 15.6 CY | CONCRETE FOR SIGNAL FOUNDATION |
| 801104 | 42 LF | WOOD SIGN SUPPORTS 4 INCH X 4 INCH |
| 801106 | 17 LF | WOOD SIGN SUPPORTS 4 INCH X 6 INCH |
| 801605 | 65 SF | SHEET ALUMINUM SIGNS CONSISTING OF: |
| | 3 EA | R4-7 KEEP RIGHT (18" X 24") GROUND MOUNT |
| | 1 EA | M6-1(1)R ARROW (21" X 15") GROUND MOUNT |
| | 1 EA | M3-2 "EAST" (24" X 12") GROUND MOUNT |
| | 1 EA | M1-5 "MARYLAND 458" (30" X 24") GROUND MOUNT |
| | 1 EA | D-3(1) (VAR X 16") DUAL SIDED, "Silver Hill RD" MAST ARM MOUNT |
| | 1 EA | D-3(1) (VAR X 16") DUAL SIDED, LEFT ARROW "Swann RD", "Swann RD" RIGHT ARROW MAST ARM MOUNT |
| | 2 EA | R3-5(L) LEFT ONLY (30" X 36") MAST ARM MOUNT |
| | 1 EA | R3-5(R) RIGHT ONLY (30" X 36") MAST ARM MOUNT |
| | 2 EA | R10-3(1) PUSHBUTTON SIGN (9"X 15") POLE MOUNT "TO CROSS SILVER HILL ROAD" |
| | 4 EA | R10-3(1) PUSHBUTTON SIGN (9"X 15") POLE MOUNT "TO CROSS SWANN ROAD" |
| 802501 | 460 LF | NO. 6 AWG STRANDED BARE COPPER GROUND WIRE |
| 802570 | 550 LF | 1 CONDUCTOR #2/0 AWG CABLE |
| 805050 | 2 EA | WEATHER HEAD, 3 INCH |
| 805125 | 80 LF | 2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED |
| 805135 | 600 LF | 3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED |
| 805140 | 130 LF | 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED |
| 805155 | 280 LF | 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED |
| 807500 | 1 EA | EMBEDDED METERED SERVICE PEDESTAL |
| 810022 | 48 LF | ELECTRICAL CABLE-1 CONDUCTOR NO.8 AWG-THHN/THWN |
| 810601 | 6 EA | NON INVASIVE DETECTOR, 500 FOOT LEAD IN CABLE |
| 811001 | 12 EA | FURNISH AND INSTALL ELECTRICAL HANDHOLE |
| 811004 | 6 EA | REMOVE ELECTRICAL HANDHOLE |
| 813022 | 73 SF | REMOVE EXISTING GROUND MOUNTED SIGNS AND SUPPORTS |
| 818004 | 4 EA | 10 FOOT BREAKAWAY PEDESTAL POLE |
| 818030 | 1 EA | STEEL POLE WITH A SINGLE 38 FOOT MAST ARM |
| 818036 | 1 EA | STEEL POLE WITH A SINGLE 50 FOOT MAST ARM |
| 818041 | 2 EA | STEEL POLE WITH A SINGLE 60 FOOT MAST ARM |
| 833060 | 20 LF | 3 INCH DIAMETER POLYVINYL CHLORIDE CONDUIT, SCHEDULE 80, RISER |
| 837001 | 8 EA | GROUND ROD- 3/4 INCH DIAMETER X 10 FOOT LENGTH |
| 860284 | 41 EA | 12 INCH LED SIGNAL HEAD SECTION |
| 860292 | 1 EA | CUT, CLEAN GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE |
| 861105 | 450 LF | ELECTRICAL CABLE- 2 CONDUCTOR (NO. 14 AWG) |
| 861107 | 1220 LF | ELECTRICAL CABLE- 5 CONDUCTOR (NO. 14 AWG) |
| 861108 | 2100 LF | ELECTRICAL CABLE- 7 CONDUCTOR (NO. 14 AWG) |
| 871202 | 1 EA | INSTALL CONTROLLER & CABINET - BASE MOUNT |

## EQUIPMENT LIST "C"

SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

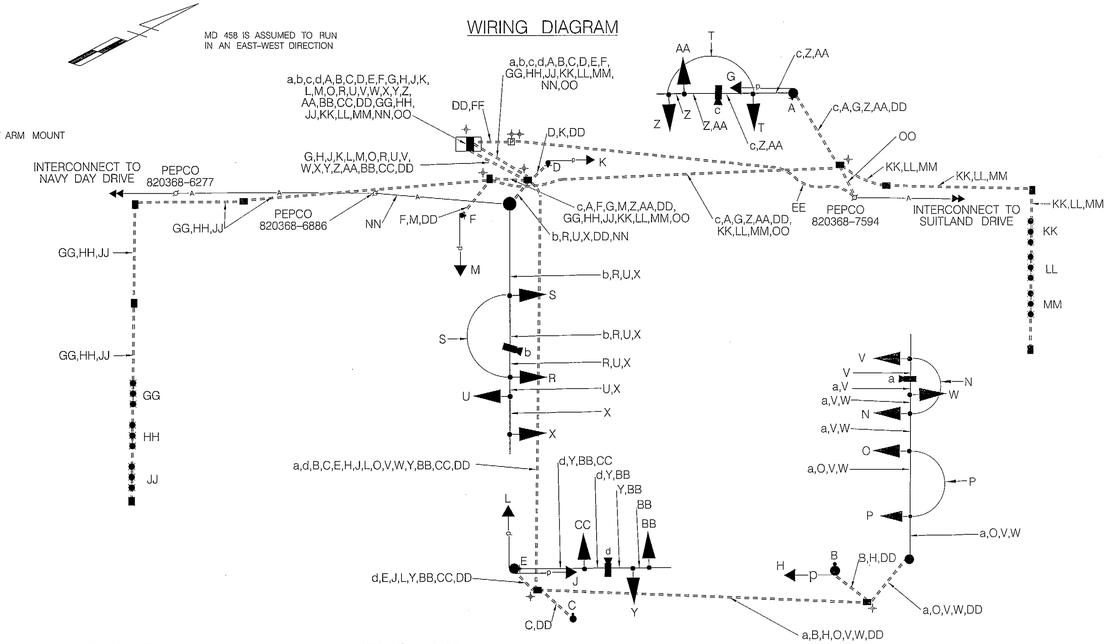
## PHASE CHART

MD 458 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PHASE 1 + 5 | ◁G— | ◁G— | ◁G— | R | R | ◁G— | ◁G— | R | R | R | R | R | R | R | R ▷G▷ | DW | DW | DW | DW | DW | DW |
| PHASE 1 & 5 CHANGE TO PHASE 1 & 6 OR 2 & 5 OR 2 & 6 | | | | | | | | | | | | | | | | | | | | | |
| PHASE 1 + 6 | ◁G— | ◁G— | ◁G— | G | G | ◁R— | ◁R— | R | R | R | R | R | R | R | R ▷G▷ | DW | WK | WK | DW | DW | DW |
| PHASE 1 CHANGE | ◁Y— | ◁Y— | ◁Y— | G | G | ◁R— | ◁R— | R | R | R | R | R | R | R | R ▷Y▷ | DW | WK | WK | DW | DW | DW |
| PHASE 2 & 5 | ◁R— | ◁R— | ◁R— | R | R | ◁G— | ◁G— | G | G | R | R | R | R | R | R | WK | DW | DW | WK | DW | DW |
| PHASE 5 CHANGE | ◁R— | ◁R— | ◁R— | R | R | ◁Y— | ◁Y— | G | G | R | R | R | R | R | R | WK | DW | DW | WK | DW | DW |
| PHASE 2 & 6 | ◁R— | ◁R— | ◁R— | G | G | ◁R— | ◁R— | G | G | R | R | R | R | R | R | WK | WK | WK | WK | DW | DW |
| PED CLEAR & COUNTDOWN | ◁R— | ◁R— | ◁R— | G | G | ◁R— | ◁R— | G | G | R | R | R | R | R | R | FLOW | FLOW | FLOW | FLOW | DW | DW |
| PHASE 2 & 6 CHANGE | ◁R— | ◁R— | ◁R— | Y | Y | ◁R— | ◁R— | Y | Y | R | R | R | R | R | R | DW | DW | DW | DW | DW | DW |
| PHASE 4 & 8 | ◁R— | ◁R— | ◁R— | R | R | ◁R— | ◁R— | R | R | G | G | G | G | G | G | DW | DW | DW | DW | DW | DW |
| PHASE 4 & 8 CHANGE | ◁R— | ◁R— | ◁R— | R | R | ◁R— | ◁R— | R | R | Y | Y | Y | Y | Y | Y | DW | DW | DW | DW | DW | DW |
| PHASE 4 & 8 ALT | ◁R— | ◁R— | ◁R— | R | R | ◁R— | ◁R— | R | R | G | G | G | G | G | G | DW | DW | DW | DW | WK | WK |
| PED CLEAR & COUNTDOWN | ◁R— | ◁R— | ◁R— | R | R | ◁R— | ◁R— | R | R | G | G | G | G | G | G | DW | DW | DW | DW | FLOW | FLOW |
| PHASE 4 & 8 ALT. CHANGE | ◁R— | ◁R— | ◁R— | R | R | ◁R— | ◁R— | R | R | Y | Y | Y | Y | Y | Y | DW | DW | DW | DW | DW | DW |
| FLASHING OPERATION | FLR/A | FLR/A | FLR/A | FLR/ | FLR/ | FLR/A | FLR/A | FLR/ | FLR/ | FLR/ | FLR/ | FLR/ | FLR/ | FLR/ | FLR/ | DARK | DARK | DARK | DARK | DARK | DARK |

## WIRING DIAGRAM

MD 458 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION




## WIRING NOTE

THE CONTRACTOR WILL "WORK WITH" PEPCO ON THE INSTALLATION OF THE 3 CABLES, 1 CONDUCTOR ELECTRICAL CABLE (NO.2AWG/THHN). IT HAS BEEN ASSUMED THAT DURING THE "WORK WITH" ADDITIONAL CABLE WILL BE COILED AND ATTACHED (TO THE WOOD POLE) TO PEPCO STANDARDS.

## WIRING KEY

- a,b,c,d – VIDEO DETECTION CAMERA LEAD IN CABLE
- A,B,C, D,E,F – 2 CONDUCTOR NO. 14 AWG ELECTRICAL CABLE
- G,H,J,K, L,M,N,O, P,R,S,T – 5 CONDUCTOR NO. 14 AWG ELECTRICAL CABLE
- U,V,W,X,Y,Z, AA,BB,CC – 7 CONDUCTOR NO. 14 AWG ELECTRICAL CABLE
- DD – NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
- EE – 1 CONDUCTOR #2/0 AWG CABLE THHN/THWN (3 CABLES)
- FF – 1 CONDUCTOR NO. 8 AWG THHN/ THWN ELECTRICAL CABLE (3 CABLES)
- GG,HH,JJ, KK,LL,MM – NON INVASIVE DETECTOR LEAD IN CABLE
- NN,OO – EXISTING INTERCONNECT TO BE PULLED BACK; RE-ROUTE TO NEW CONTROLLER (SEE NOTES ON DRAWING SG-1)
- ⏚ – GROUND ROD (3/4" DIA. X 10 FT. LENGTH)


WAE Williams Associates Engineers
Williams Associates-Engineers, P.A.
777 State Route 3 N, Suite D
Gambrills, Maryland 21054
Phone: 410-729-1004
Facsimile: 410-725-1009


BY: mhusselbee –

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 458 (SILVER HILL ROAD)
AT SWANN ROAD
SUITLAND, MARYLAND

# GENERAL INFORMATION PLAN

SCALE NONE ADVERTISED DATE 01-2013 CONTRACT NO. PG7865777

DESIGNED BY PMH
DRAWN BY PMH
CHECKED BY WS
F.A.P. NO.
COUNTY PRINCE GEORGE'S
LOGMILE 16045801.21
TIMS NO. K099
TOD NO.

TS NO. 247-E | DRAWING SG-13 OF 23 | SHEET NO. OF

PLOTTED: Friday, January 18, 2013 AT 01:40 PM
FILE: \\Server02\wae files\01_Project\081_TEDD-BA\01_Task Work\061_0103_Task03 – MD 458 at Swann Rd\061_010302_Analysis\CADD\pSG-P003_MD458_SwannRd.dgn